

# Welcome to CS 423 Operating System Design



University of Illinois at Urbana-Champaign

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## What's my End Result?


### **Before** CS 423:

- Knowledge of C/C++
- Basic knowledge of Linux/POSIX APIs and functions

### **After** CS 423:

- In-depth knowledge of how basic OS functions work
- Knowledge of virtual machines
- Introduction to advanced OS topics
  - Distributed system issues, embedded system issues, QoS, etc.
- Ability to modify OS code

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## The Team

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**Tarek Abdelzaher (Instructor)**

- Office: 4126 SC
- Office Hours: 11-noon Wed/Fri.
- Tel: (217) 265-6793
- [zaher@cs.uiuc.edu](mailto:zaher@cs.uiuc.edu)

**Jin Heo (TA)**

- Office: 0207 SC
- Office Hours: 11-noon Tue, 3:30-4:30 Thu.
- [jinho@uiuc.edu](mailto:jinho@uiuc.edu)

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## Newsgroups

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- **class.cs423**
- Starting *next week*
- We encourage discussion on classroom issues

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## Textbooks

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- *Recommended:* Modern Operating Systems (Third Edition), Andrew S. Tanenbaum, Prentice Hall, 2008
- *Recommended:* Virtual Machines, James E. Smith and Ravi Nair, Elsevier / Morgan Kaufmann, 2005
- *Optional:* Understanding the Linux Kernel, Daniel P. Bovet and Marco Cesati, 3rd Edition (covers Linux Kernel 2.6.11), O'Reilly Media, Inc. 2007.

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## Your CS 423 "Mission"

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- Come to class, MWF, 10-10:50am
  - Please participate actively...
- Code 4 programming assignments (in teams of 2 or 3)
  - Same team for all four assignments
- Take Midterm, Monday 3/1<sup>st</sup>
- Do one homework "practice final"
  - Work in homework independently
- Take Final, Wednesday 5/5<sup>th</sup>
- If taking class for 4 credits: Do project

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## Grading

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- **Final Exam: 35%**
- **Mid-term Exam: 25%**
- **Homework (one total): 5%**
- Team **Machine Problems (4 total): 25%**
  - **4%, 7%, 7%, 7%**
- **Participation: 10%**
  - Class involvement
  - Pop quizzes

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## Please...

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- No late homework/MP submissions
- 1 week window for re-grades from return date
- Cheating policy: Zero tolerance
  - 1<sup>st</sup> offense: get zero
  - 2<sup>nd</sup> offense: fail class
  - Example: You submitted two MPs in which solutions were not your own. Both were discovered at the same time. You fail class.

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## Introduction

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- What is an operating system?
- What is it for?
- What are virtual machines?
- What special applications need additional support?

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## Course Objectives

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- Advanced knowledge of components of an operating system and their internal design.
  - CS 241 is a prerequisite
- Introduction to virtual machines
- Advanced topics in operating systems
- Write, compile, debug, and execute modifications to operating system code

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## Schedule

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- See class webpage  
<http://www.cs.uiuc.edu/class/sp10/cs431>

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## Your to-do List

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**Today:**

- Visit the class webpage and check out all the info  
<http://www.cs.uiuc.edu/class/sp10/cs423>
- Refresh your system programming skills (e.g., review CS 241 and see tutorial below)  
<http://www.lysator.liu.se/c/bwk-tutor.html>

**Soon:**

- Team up for solving programming assignments
- Familiarize yourself with newsgroups if you have not used them already (see <http://news.cs.uiuc.edu>) and subscribe to: **class.sp10.cs241**

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